MISSOURI DEPARTMENT OF TRANSPORTATION
MATERIALS ENGINEERING
Jefferson City, Missouri

Test Method
MoDOT T48
DETERMINATION OF THE PURITY OF CALCIUM CHLORIDE

1.0 SCOPE.

1.1 This method describes a procedure for determining the purity of Calcium Chloride intended for use in snow and ice removal.

2.0 REAGENTS AND APPARATUS.

2.1 Reagents and Apparatus as described in MoDOT Test Method T26.

3.0 PROCEDURE.

3.1 Weigh, to the nearest 0.1 mg, a sample of the material sufficient to contain 1.45 to 1.55 grams of anhydrous $CaCl_2$. Transfer to a 1000 ml volumetric flask and add 200 ml H_2O. Add a few drops of HCl, Specific Gravity 1.19, to clear the solution. Add by pipette, 25 ml of the $MgCl_2$ solution. Make just alkaline to Methyl Red with NH_4OH, and dilute to volume. Determine the calcium by titrating a 20 ml aliquot, using the method described in MoDOT Test Method T26.

4.0 CALCULATIONS.

4.1 Calculate the percent Calcium Chloride as follows:

$$\%\ CaCl_2 = \frac{\text{ml of titration} \times Fca \times 50 \times 0.0495}{\text{Wt. of sample}}$$

Report as:

% CaCl ($CaCl_2$) to the nearest 0.1 percent